

TABLE 2.—Free-air resultant winds (meters per second) based on pilot balloon observations made near 7 a. m. (E. S. T.) during October, 1932—Continued

	Los Angeles, Calif. (217 meters)		Medford, Oreg. (410 meters)		Memphis, Tenn. (83 meters)		New Orleans, La. (25 meters)		Oakland, Calif. (8 meters)		Oklahoma, City, Okla. (402 meters)		Omaha, Nebr. (306 meters)		Phoenix, Ariz. (356 meters)		Salt Lake City, Utah (1,294 meters)		Sault Ste. Marie, Mich. (198 meters)		Seattle, Wash. (14 meters)		Washington, D. C. (10 meters)	
	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity
Surface.....	10	1.1	73	0.3	227	0.6	39	1.9	21	2.4	216	0.8	331	0.7	98	1.6	145	1.6	33	1.1	132	1.0	321	1.1
500.....	39	1.8	6	0.1	254	3.2	52	3.1	10	4.6	220	2.1	264	1.5	86	2.5	338	0.9	205	4.5	307	3.8	307	3.8
1,000.....	51	2.6	265	0.4	256	4.2	37	0.6	20	5.4	254	5.5	279	4.5	68	2.2	286	2.4	212	5.6	283	8.1	283	8.1
1,500.....	42	2.3	241	0.2	269	4.7	338	2.2	360	3.6	265	3.9	287	6.7	96	1.1	166	2.6	274	5.2	222	4.5	284	9.9
2,000.....	10	2.4	340	1.7	278	4.1	327	2.6	347	4.2	263	5.3	282	6.4	184	1.3	232	1.4	280	7.3	268	2.5	280	10.0
2,500.....	5	2.2	339	3.6	253	1.6	298	2.4	357	5.4	265	5.9	276	8.1	230	2.1	277	2.3	277	10.1	313	3.0	281	9.6
3,000.....	356	2.8	320	4.6	276	1.6	246	1.8	13	3.9	264	7.0	279	8.9	227	2.5	300	4.6	282	10.6			282	7.2
4,000.....			312	5.6							269	8.1	303	8.5	248	5.3	297	6.7						
5,000.....																	309	11.6						

RIVERS AND FLOODS

By RICHMOND T. ZOCH

[River and Flood Division, Montrose W. Hayes in charge]

In October there were floods in the Atlantic Coast and East Gulf States and in Texas; those in Texas, however, may be considered a continuation of the September overflows which were mentioned in the MONTHLY WEATHER REVIEW of that month.

The most noteworthy of all the floods of both September and October were those in the lower Rio Grande Valley. The following summary concerning them has been furnished by the official in charge of the Weather Bureau office in Brownsville, Tex.:

Torrential and probably unprecedented rains in Val Verde and adjacent counties in Texas during the last two days of August and the first day of September, and heavy to excessive rains over the Rio Grande and tributary watersheds below Del Rio later in September and early in October caused destructive floods in the lower reaches of the Pecos and Devils Rivers, and in the Rio Grande from Del Rio, Tex., to the Gulf of Mexico. The floods began early in September and lasted well into October in the lower Rio Grande Valley.

Record-breaking crest stages occurred in practically all of the reach from Del Rio to Brownsville.

On account of a rather long and severe dry spell in southern Texas, occurring somewhat earlier than usual, few fall crops had been planted. This minimized the flood damage, but still the loss of property was enormous in the aggregate, and is conservatively estimated to have been more than \$2,500,000 on the American side of the river. In addition, 10 or 12 lives were lost.

The value of all classes of property, including levees, that was saved by the timely warnings and accurate crest stage forecasts is even more difficult to estimate, but would undoubtedly approximate \$500,000. Besides, at least some lives were saved.

The losses due to suspension of business appear to have been offset in a large measure by the employment the flood created for many people who otherwise would have been unemployed.

Table of flood stages in October, 1932

[All dates in October unless otherwise specified]

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE					
Chenango: Sherburne, N. Y.-----	<i>Feet</i> 8	6	7	<i>Feet</i> 8.7	6.
Susquehanna:					
Oneona, N. Y.-----	12	6	8	14.7	7.
Bainbridge, N. Y.-----	11	6	8	13.0	7.
James:					
Columbia, Va.-----	18	18	20	27.3	18.
Richmond, Va.-----	8	19	20	14.2	19.

Table of flood stages in October, 1932—Continued

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE—CON.					
Dan:	<i>Feet</i>			<i>Feet</i>	
Danville, Va.-----	8	18	19	13.5	18.
Clarksville, Va.-----	12	20	20	14.3	20.
Roanoke:					
Randolph, Va.-----	18	18	20	28.9	19.
Weldon, N. C.-----	31	19	22	42.7	21.
Scotland Neck, N. C.-----	23	20	24	30.1	23.
Williamston, N. C.-----	9	26	31	11.2	28.
Cape Fear: Elizabethtown, N. C.-----	20	19	21	24.9	20.
Lynch: Effingham, S. C.-----	14	23	25	15.3	24.
Peedee:					
Cheraw, S. C.-----	27	18	22	33.7	20.
Mars Bluff Bridge, S. C.-----	17	20	28	20.9	24.
Poston, S. C.-----	18	25	30	20.3	27.
Saluda:					
Pelzer, S. C.-----	6	16	19	11.0	17.
Chappells, S. C.-----	12	16	21	20.4	19.
Broad: Blairs, S. C.-----	14	16	19	27.8	18.
Congaree: Columbia, S. C.-----	15	17	19	21.7	19.
Catawba-Waterree:					
Catawba, S. C.-----	11	17	18	16.5	18.
Camden, S. C.-----	23	19	20	25.5	20.
Santee:					
Rimini, S. C.-----	12	18	27	18.9	22.
Ferguson, S. C.-----	12	20	31	14.0	23-24.
Jamestown, S. C.-----	12	26	31	16.1	30.
Savannah:					
Calhoun Falls, S. C.-----	8	17	17	11.6	17.
Ellenton, S. C.-----	14	18	24	22.7	21.
EAST GULF OF MEXICO DRAINAGE					
Black Warrior: Lock 10, Tuscaloosa, Ala.-----	46	17	20	61.4	18.
Tombigbee:					
Aberdeen, Miss.-----	34	18	22	37.4	19.
Columbus, Miss.-----	25	20	21	25.5	20.
Lock 4, Demopolis, Ala.-----	39	17	(1)	50.6	26.
Lock 3, Ala.-----	33	17	(1)	56.8	27-28.
Lock 2, Ala.-----	46	18	(1)	57.5	29.
Lock 1, Ala.-----	31	18	(1)	38.6	Nov. 1.
Chickasawhay: Enterprise, Miss.-----	20	18	10	20.9	18.
Pearl: Jackson, Miss.-----	18	20	31	23.2	28.
MISSISSIPPI SYSTEM					
Ohio Basin					
Pigeon: Newport, Tenn.-----	6	17	17	8.1	17.
French Broad: Asheville, N. C.-----	4	17	19	6.5	18.
Elk: Fayetteville, Tenn.-----	14	16	17	20.0	17.
WEST GULF OF MEXICO DRAINAGE					
West Fork: Fort Worth, Tex.-----	20	Sept. 5	Sept. 5	30.7	Sept. 5.
Trinity:					
Dallas, Tex.-----	28	Sept. 6	Sept. 8	34.0	Sept. 7.
Long Lake, Tex.-----	40	Sept. 8	Sept. 9	41.3	Sept. 8.
Nueces:					
Cotulla, Tex.-----	15	Sept. 4	Sept. 12	27.0	Sept. 7.
Three Rivers, Tex.-----	35	Sept. 13	Sept. 16	39.6	Sept. 14.

Table of flood stages in October, 1932—Continued

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
WEST GULF OF MEXICO DRAINAGE—continued					
Pecos: Pecos, Tex.....	<i>Feet</i> 13	1	8	<i>Feet</i> 15.1	5.
Rio Grande:					
Del Rio, Tex.....	15	(Sept. 1 Sept. 7 Sept. 9 Sept. 30	Sept. 2 Sept. 7 Sept. 9 Sept. 30	34.5 18.8 16.3 17.2	Sept. 1. Sept. 7. Sept. 9. Sept. 30.
Eagle Pass, Tex.....	16	(Sept. 1 Sept. 8 Sept. 30 6	Sept. 3 Sept. 10 1 7	47.8 20.9 19.0 17.9	Sept. 2. Sept. 8. Sept. 30. 7.
Laredo, Tex.....	27	(Sept. 3 Sept. 3 Sept. 10	Sept. 4 Sept. 7 Sept. 12	52.0 34.8 23.4	Sept. 3. Sept. 5. Sept. 11.
Rio Grande, Tex.....	21	(Sept. 29 Sept. 6 Sept. 30	Sept. 10 Sept. 15 12	31.0 25.8 25.8	Sept. 30. Sept. 8. 2.
Hidalgo, Tex.....	22	(Sept. 6 Sept. 30 Sept. 6	Sept. 12 Sept. 21 Sept. 25	21.8 21.8 20.8	Sept. 10-15. 2-4, 10. 24.
Mercedes, Tex.....	20	(Sept. 23 Sept. 25 23	Sept. 22 17	18.3 18.3 20.8	Sept. 12, 14-16. Sept. 29-3.
Brownsville, Tex.....	18	(Sept. 9 Sept. 25	Sept. 22 17	18.3 18.3	

Statement of Flood Losses

ATLANTIC SLOPE DRAINAGE

SUSQUEHANNA RIVER IN NEW YORK

Matured crops.....	\$325
Livestock and other movable property.....	1, 000

JAMES RIVER IN VIRGINIA

Tangible property totally or partially destroyed.....	295
Matured crops.....	13, 450
Livestock and other movable property.....	140
Suspension of business, including wages of employees..	2, 450

ROANOKE RIVER IN VIRGINIA AND NORTH CAROLINA

Tangible property totally or partially destroyed.....	10, 000
Matured crops.....	37, 500
Livestock and other movable property.....	1, 000
Suspension of business, including wages of employees..	2, 500

CAPE FEAR RIVER IN NORTH CAROLINA

Tangible property totally or partially destroyed.....	1, 000
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PEEDEE RIVER IN SOUTH CAROLINA

Matured crops.....	1, 600
Livestock and other movable property.....	100

SALUDA RIVER IN SOUTH CAROLINA

Matured crops.....	200
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CONGAREE RIVER IN SOUTH CAROLINA

Matured crops.....	1, 000
Livestock and other movable property.....	200

CATAWBA RIVER IN SOUTH CAROLINA

Matured crops.....	1, 500
Prospective crops.....	500

SANTEE RIVER IN SOUTH CAROLINA

Livestock and other movable property.....	280
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SAVANNAH RIVER IN SOUTH CAROLINA AND GEORGIA

Matured crops.....	3, 000
Prospective crops.....	1, 000

EAST GULF OF MEXICO DRAINAGE

BLACK WARRIOR RIVER IN ALABAMA

Tangible property totally or partially destroyed.....	2, 500
Matured crops.....	139, 250
Prospective crops.....	11, 000
Livestock and other movable property.....	7, 000
Suspension of business, including wages of employees..	5, 500

TOMBIGBEE RIVER IN MISSISSIPPI AND ALABAMA

Tangible property totally or partially destroyed.....	12, 750
Matured crops.....	39, 325
Prospective crops.....	13, 000
Livestock and other movable property.....	16, 950
Suspension of business, including wages of employees..	2, 200

CHICKASAWHAY RIVER IN MISSISSIPPI

Matured crops.....	100
Livestock and other movable property.....	100
Suspension of business, including wages of employees..	100

MISSISSIPPI SYSTEM

OHIO BASIN

FRENCH BROAD RIVER IN NORTH CAROLINA

Matured crops.....	3, 000
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ELK RIVER IN TENNESSEE

Tangible property totally or partially destroyed.....	1, 000
Matured crops.....	2, 000
Livestock and other movable property.....	100

WEST GULF OF MEXICO DRAINAGE

TRINITY RIVER IN TEXAS

Tangible property totally or partially destroyed.....	34, 800
Matured crops.....	10, 500
Prospective crops.....	2, 500
Suspension of business, including wages of employees..	2, 000

NUECES RIVER IN TEXAS

Tangible property totally or partially destroyed.....	30, 500
Matured crops.....	1, 000
Prospective crops.....	4, 500
Livestock and other movable property.....	300
Suspension of business, including wages of employees..	4, 500

PECOS RIVER IN NEW MEXICO AND TEXAS

Tangible property totally or partially destroyed.....	60, 000
Matured crops.....	15, 000

RIO GRANDE RIVER IN TEXAS

Tangible property totally or partially destroyed.....	2, 000, 000
Matured crops.....	25, 000
Prospective crops.....	300, 000
Livestock and other movable property.....	150, 000
Suspension of business, including wages of employees..	25, 000

ESTIMATED VALUE OF PROPERTY SAVED BY WARNINGS

Susquehanna River in New York.....	\$5, 000
James River in Virginia.....	19, 000
Roanoke River in Virginia and North Carolina.....	50, 000
Cape Fear River in North Carolina.....	2, 000
Peedee River in South Carolina.....	23, 000
Saluda River in South Carolina.....	500
Broad River in South Carolina.....	700
Congaree River in South Carolina.....	6, 000
Catawba-Wateree River in South Carolina.....	9, 500
Santee River in South Carolina.....	8, 850
Savannah River in South Carolina and Georgia.....	3, 000
Black Warrior River in Alabama.....	63, 000
Tombigbee River in Mississippi and Alabama.....	143, 000
Elk River in Tennessee.....	1, 000
Trinity River in Texas.....	48, 950
Nueces River in Texas.....	15, 000
Rio Grande River in Texas.....	500, 000

Total..... 898, 500